ABSTRACT OF THE DISCLOSURE

A method of generating musical tones and a storage medium storing a program for executing the method are provided. Musical piece data is decomposed into phrases, the musical piece data being formed of pieces of performance data arranged in the order of performance. The pieces of performance data of the musical piece data are analyzed for each of the phrases obtained by the decomposing step. Tone color control data is prepared for each of the phrases according to results of the analyzing. The pieces of performance data of the musical piece data are reproduced by sequentially reading the pieces of performance data at timing at which the pieces of performance data are to be performed to the order of performance. Tone color characteristics of musical tones to be generated based on selected ones of the pieces of performance data which are reproduced by the reproducing step, are controlled according to the tone color control data prepared for ones of the phrases to which the selected ones of the pieces of performance data belong, respectively.